CLINICAL-PATHOLOGICAL INDICATORS OF AN OPPORTUNISTIC BREAST CANCER SCREENING: A POPULATION-BASED STUDY

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SGPATH 2009
Locarno, 5-7 november 2009

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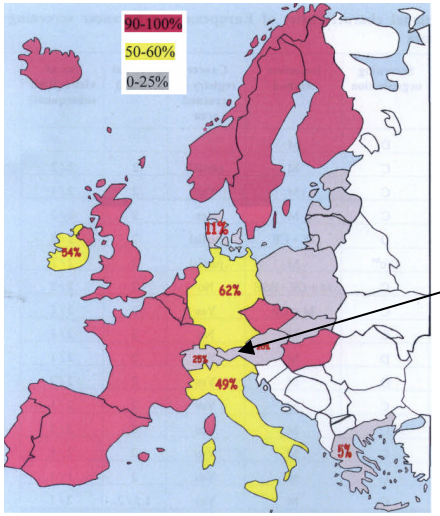
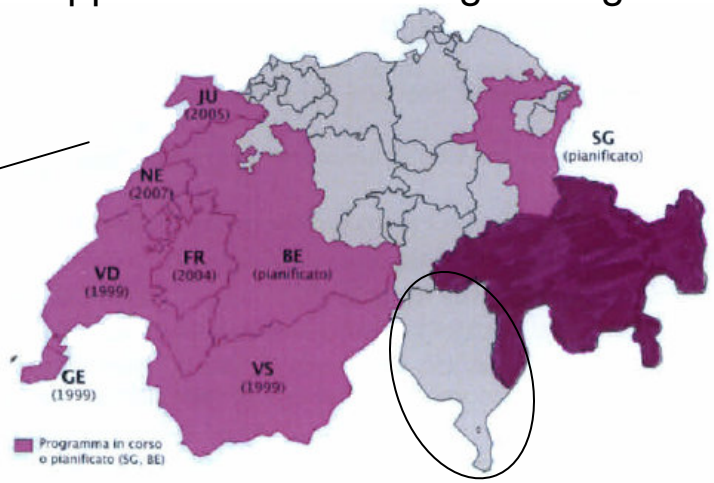
BACKGROUND (I)

- In case of breast cancer it is essential to promote secondary prevention, aimed at maximising the detection of small-diameter invasive cancers

Coverage of organized screening programmes in Europe



In Switzerland there is a co-existence of systematic screening programmes and opportunistic screening strategies



- Although data coming from organized screening programmes are several, little is known about the performance of opportunistic screening and comprehensive population-based studies are still lacking

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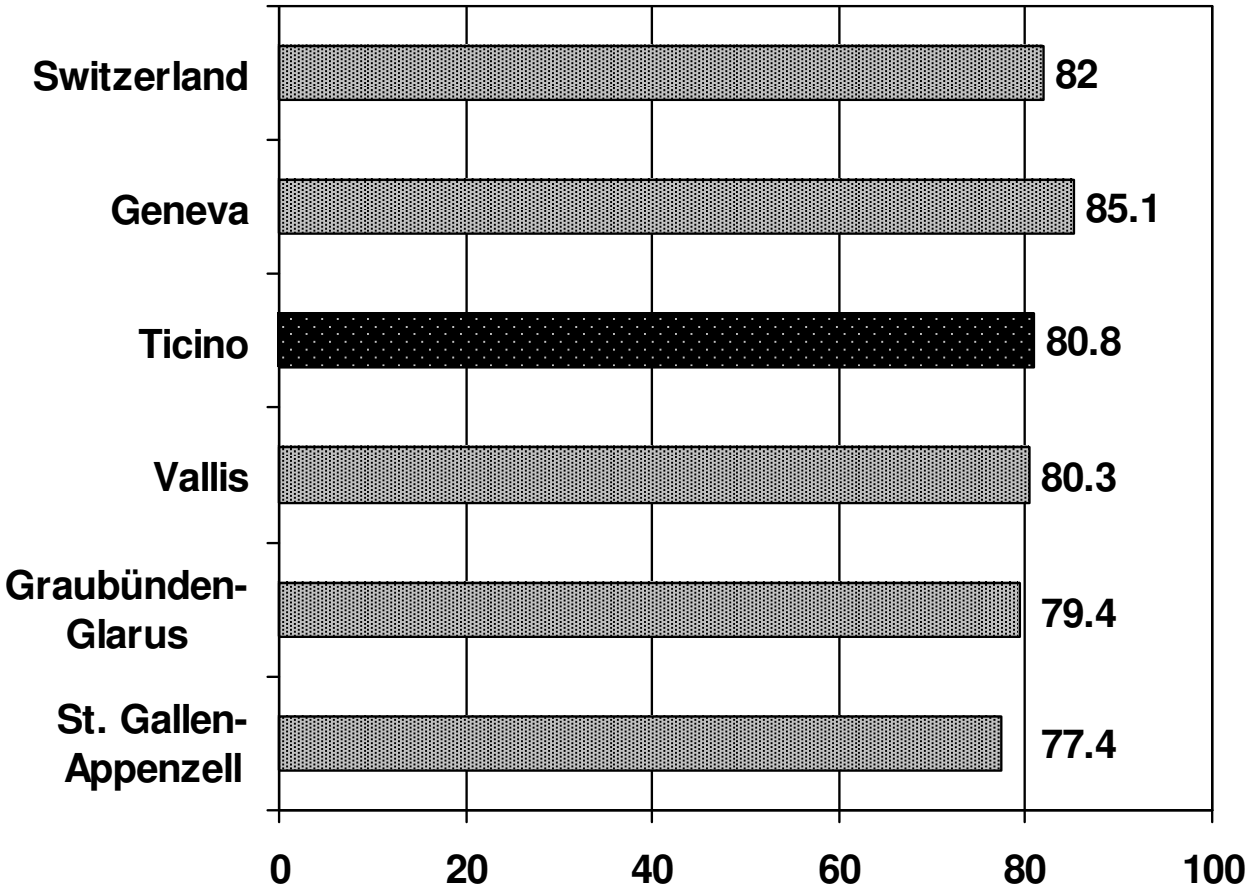
BACKGROUND (II)

5-year Relative SURVIVAL in Ticino and Switzerland (the EUROCARE IV Study)



EUROCARE
Survival of cancer patients in Europe

icp
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AIMS OF THE STUDY

- To assess specific indicators at the diagnosis, which are independent of applied therapeutic treatments and reported in the *European Guidelines for Quality Assurance for Breast Cancer Screening*

- To compare our data with those coming from populations where a programmed screening strategy is implemented

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METHODS

- Case-selection: patients with primary ductal carcinoma in-situ (DCIS) or invasive breast cancers diagnosed between 1996 and 2007,selected by Ticino Cancer Registry
- Essential information (tumour diameter, AJCC stage, histological grade), abstracted from pathology reports coming from the same core group of pathologists, thus ensuring the reproducibility of results
- Analysis according to tumour behaviour and time-period
- World age-standardized incidence rates (per 100,000)
- Time trends analysis and Annual Percentage Change (APC) performed through the Joinpoint regression model

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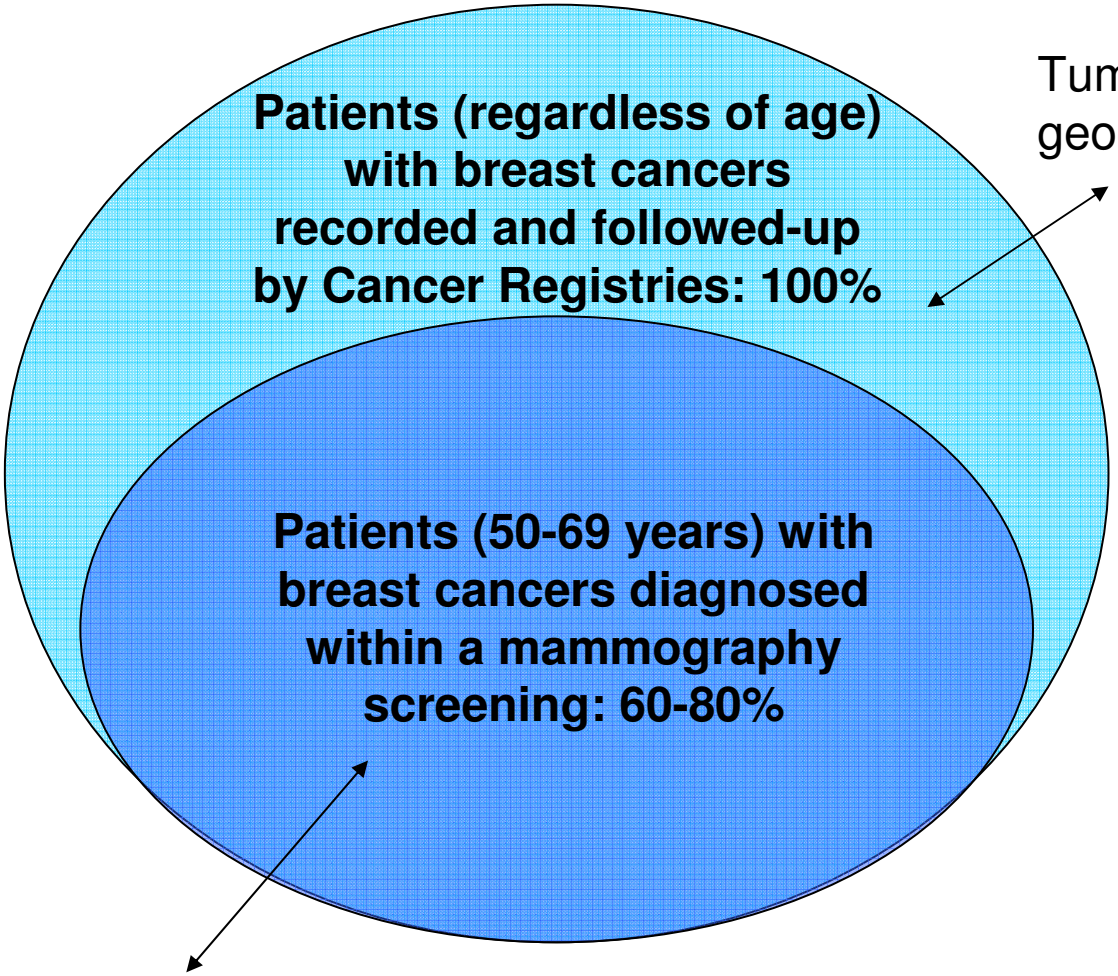
WHICH POPULATION IS OBSERVED BY A CANCER REGISTRY?



Tumour diagnosis in the geographic unit (e.g. Ticino)

Tumour diagnosis performed through a screening programme

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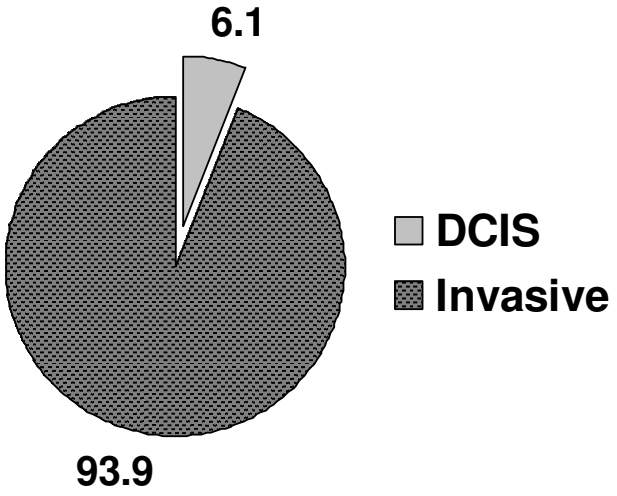
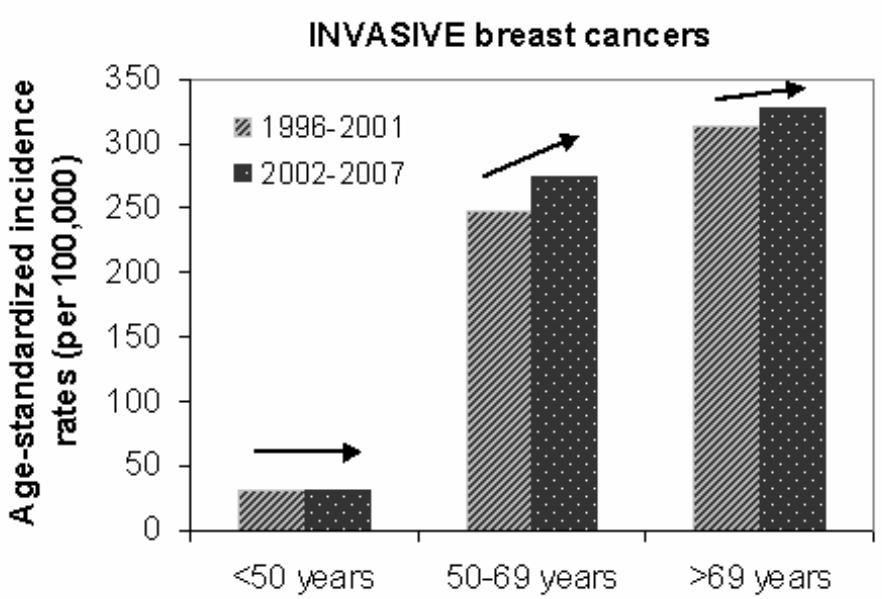
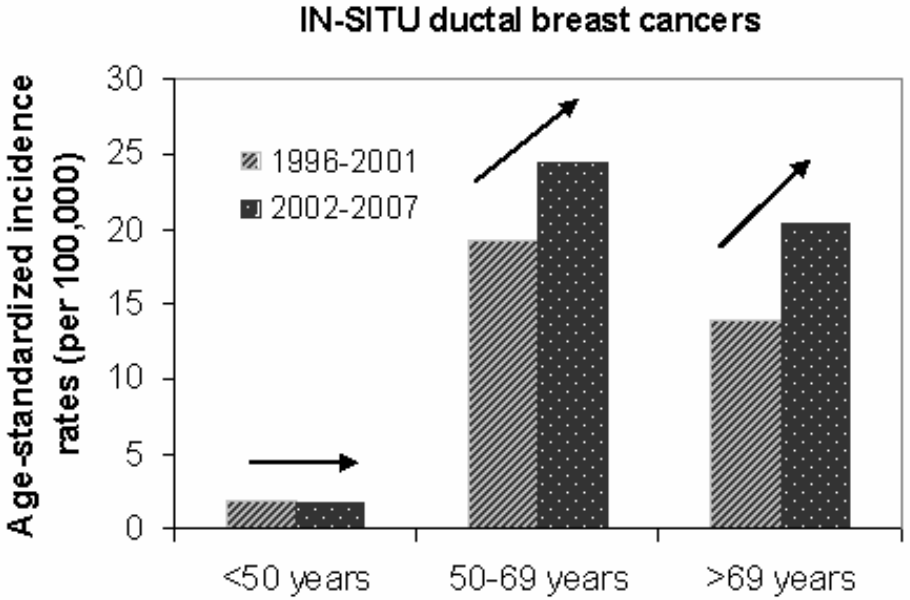
INCIDENCE
Ticino, 1996-2007

3047 incident breast cancer cases:

- 187 DCIS (mean age: 60.4)
- 2860 invasive (mean age: 63.0)







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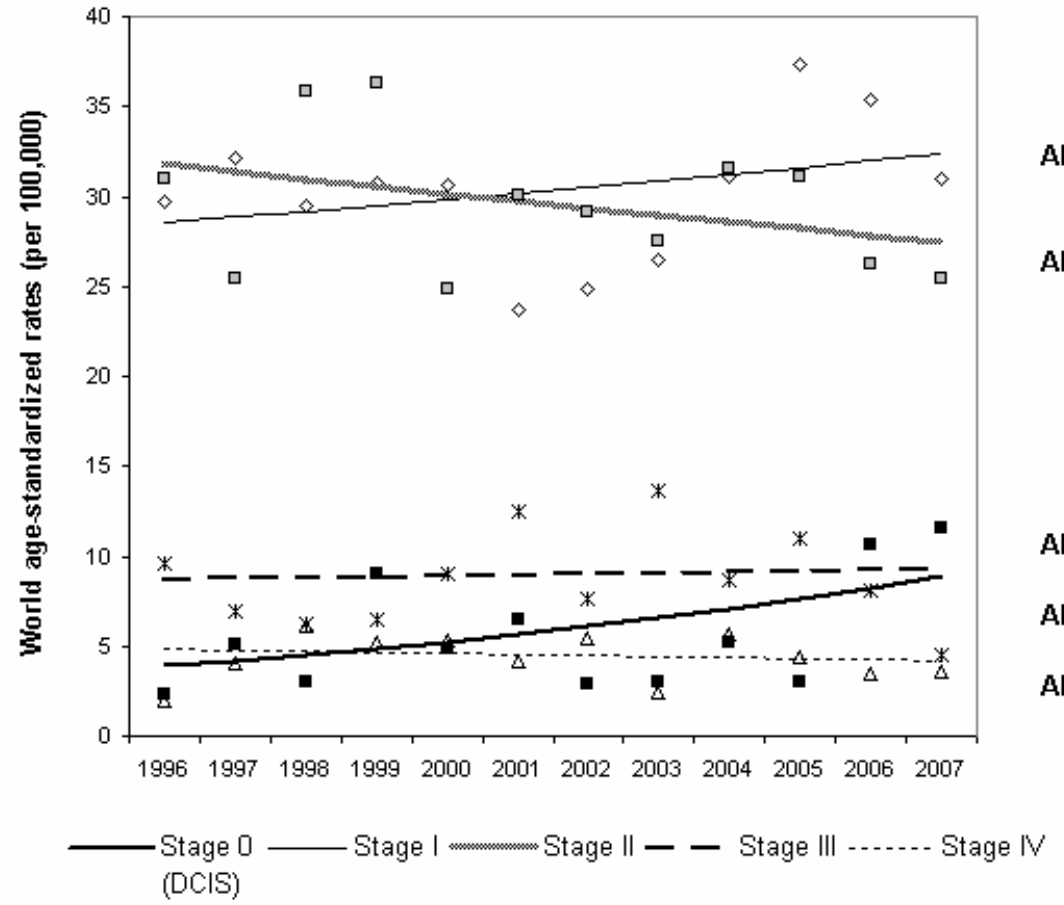
TREND OF INCIDENCE ACCORDING TO STAGE AT DIAGNOSIS
Ticino, 1996-2007



APC (stage I): 1.2; 95%CI: -1.3; 3.6

APC (stage II): -1.3; 95%CI: -3.6; 1.1

APC (stage III): 0.6; 95%CI: -5.5; 7.1

APC (stage 0): 7.8; 95%CI: -1.5; 18.0

APC (stage IV): -1.2; 95%CI: -7.1; 5.1

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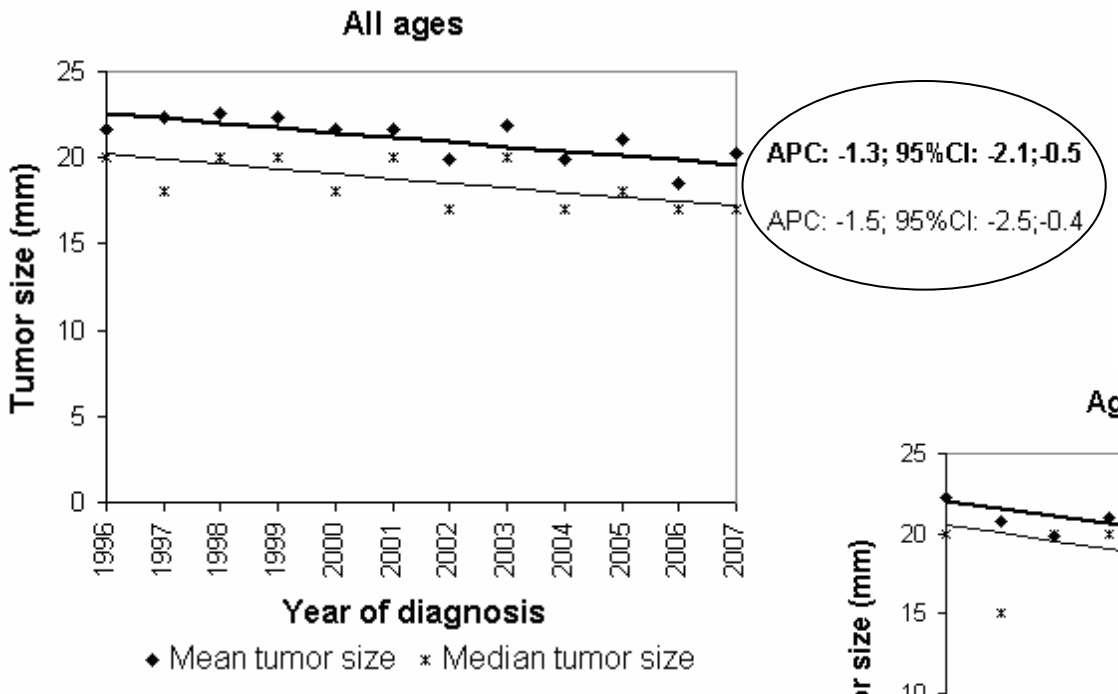
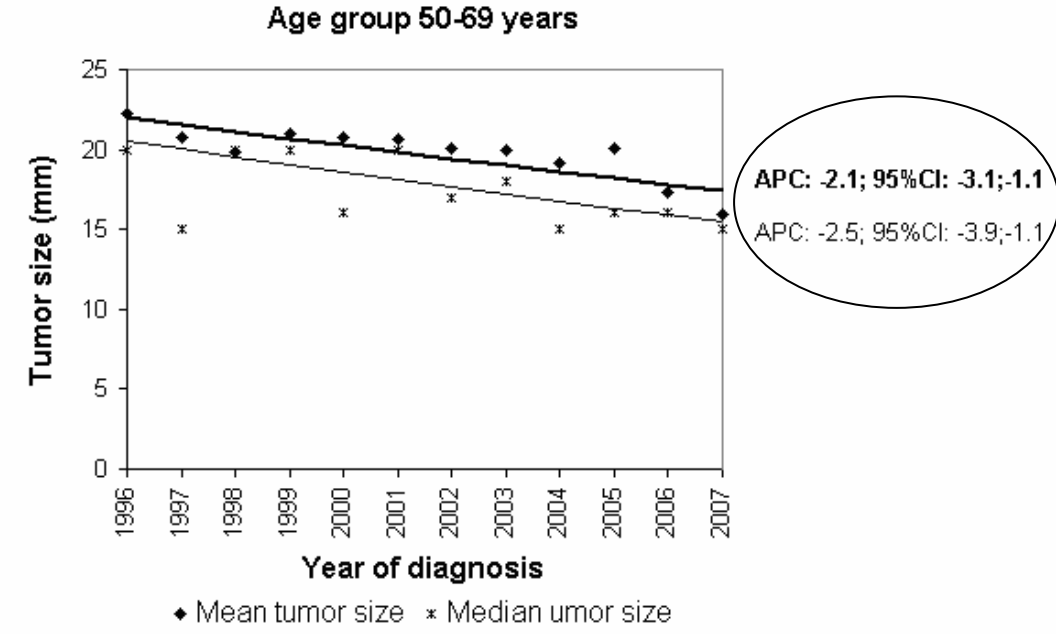
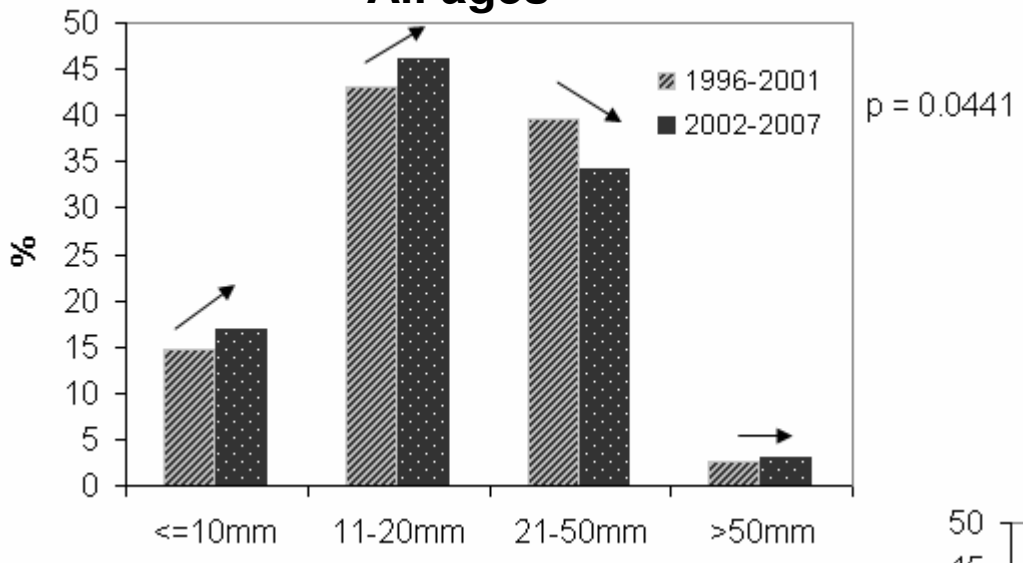
TREND OF TUMOUR DIAMETER
INVASIVE CASES
Ticino, 1996-2007





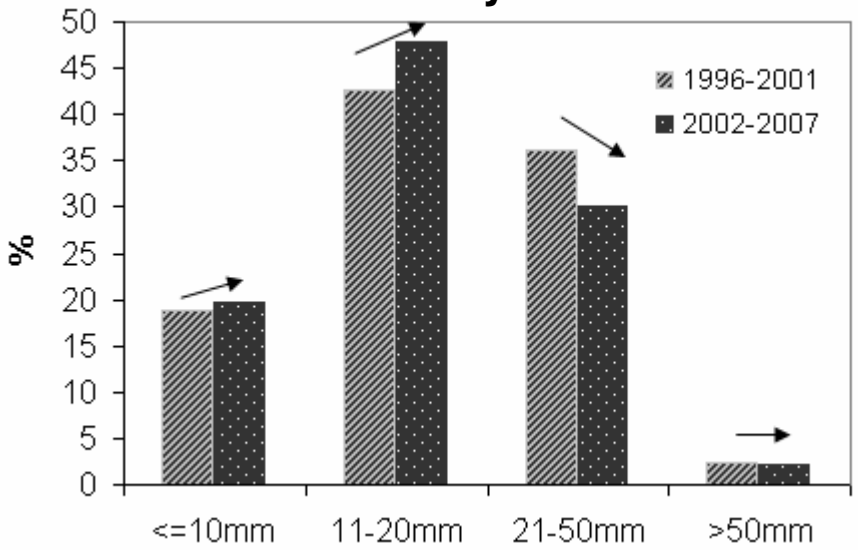
INVASIVE CASES ACCORDING TO TUMOUR DIAMETER CLASS Ticino, 1996-2001 and 2002-2007

All ages



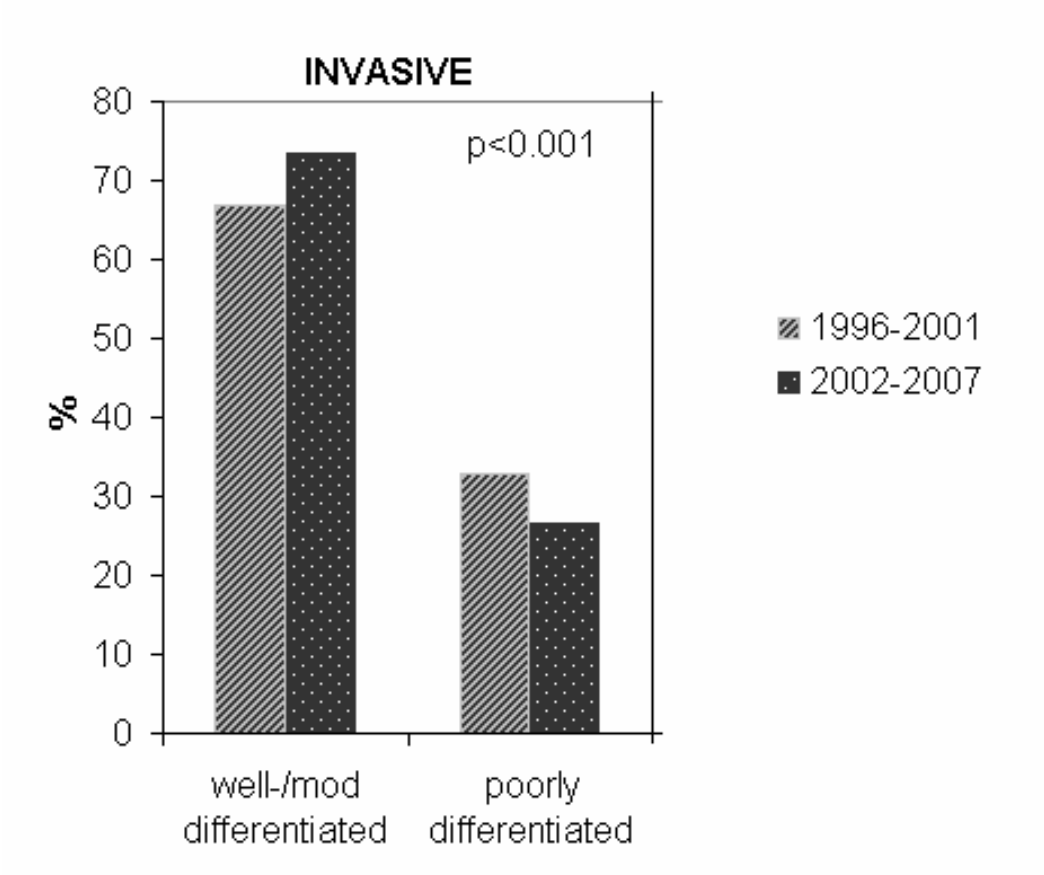
p = 0.0441

50-69 years



p = 0.1821

% TUMOURS ACCORDING TO THE HISTOLOGICAL GRADE
Ticino, 1996-2001 and 2002-2007



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COMPARISONS WITH OTHER POPULATION-BASED STUDIES

Parameter	Screening Programme Guidelines	Ticino (south of Switzerland), 1996-2007	Other population-based studies ^
Proportion of in-situ cancers	NA	6.1%	7.4% and 10% in the Netherlands [1, 2] 13% and 15% in US [3, 4]
Proportion of in-situ cancers (50-69 years)	10-20%	8.4%	11.6% in the Netherlands [2] 12.3% in Geneva [5, 6] 12.5% in Vaud [5, 6]
Proportion of invasive cancers with tumour size ≤10 mm (50-69 years)	≥25-30%	18.2%*	26.1% in Geneva [5, 6] 30.1% in Vaud [5, 6]
Proportion of invasive cancers with tumour size ≤20 mm (50-69 years)	NA	63.5%*	70.4% in Geneva [5, 6] 70.1% in Vaud [5, 6]
Median tumour size for invasive cancers (mm)	NA	20mm	15mm in Rhode Island 15mm in Denmark [7]
Mean tumour size for invasive cancers (mm)	NA	22mm	20mm in Rhode Island [3]
Proportion of invasive cancers with negative lymph node	>70-75%	60%	53.7% in Denmark [7] *43.3% in Denmark* [7] 64.7% in Rhode Island [3]
Proportion of invasive tumours with Stage I	NA	40.2%	43% in Denmark [7]
Proportion of invasive tumours with Stage II+	<25-30%	59.8%	57% in the Netherlands [1] 46.5% in Rhode Island [3]

NA: not available; * data for the period 2000-2005, with the aim of being comparable with other Swiss data (i.e. Geneva and Vaud)

^ all results come from Regions where an organized screening programme is implemented, with the exception of those reported in italics, resulting from opportunistic screening.

[1] (Louwman *et al*, 2008); [2] (van Steenbergen *et al*, 2008); [3] (Coburn *et al*, 2004); [4] (Malmgren *et al*, 2008); [5] (Bulliard *et al*, 2009); [6] (Schopper & de Wolf, 2007); [7] (Jensen *et al*, 2008)

CONCLUSION

- Important improvements in prognostic features (such as tumour diameter, % of DCIS, stage and grade shifting) have been observed over the study period

- But still less favourable than those achieved where organized screening programmes are implemented

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THANK YOU FOR YOUR ATTENTION

Full Paper
British Journal of Cancer advance online publication 27 October 2009; doi: 10.1038/sj.bjc.6605378

Assessment of breast cancer opportunistic screening by clinical–pathological indicators: a population-based study

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Received 24 July 2009; Revised 13 September 2009; Accepted 28 September 2009; Published online 27 October 2009.

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